

REMARKS

Applicants thank the Examiner for the thorough consideration given the present application.

Claims 1-15 and 21-22 are pending in the application. Claims 8 and 21 are independent. By this amendment, claim 1 is amended. No new matter is involved. Support for the amendments to claim 1 is found, for example, in Applicants' detailed description of the invention, including Fig. 7C and the related portions of the main body of the specification directed to Fig. 7C, and in Applicants' originally filed claims.

Reconsideration of this application, as amended, is respectfully requested.

Claim Objections

Claims 1, 8 and 21 are objected to because the description of a separation region as a second semiconductor layer over the first semiconductor layer is inconsistent with the definition of a separation region as an alignment of the first metal layer and the second metal layer.

In order to overcome this objection, Applicants have amended device claim 1 to be consistent with the originally filed specification which states, for example, on page 6, lines 1-14, that a first metal layer on the second semiconductor layer and patterned in a same pattern as the second semiconductor layer such that the first metal layer and second semiconductor layer define a separation region.

Reconsideration and withdrawal of this objection are respectfully requested.

Claim Rejections under 35 U.S.C. 103

Claims 1, 8, 21 and 22 stand rejected under 35 U.S.C. §103(a) as unpatentable over U.S. Patent 6,078,365 to Ueda et al. (hereinafter, "Ueda") in view of U.S. patent 6,529,251 to Hibino et al. ("Hibino"). This rejection is respectfully traversed.

Because the rejection is based on 35 U.S.C. §103, what is in issue in such a rejection is "the invention as a whole," not just a few features of the claimed invention. Under 35 U.S.C. §103, "[a] patent may not be obtained . . . if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." The determination under §103 is whether the claimed invention as a whole would have been obvious to a person of ordinary skill in the art at the time the invention was made. See In re O'Farrell, 853 F.2d 894, 902, 7 USPQ2d 1673, 1680 (Fed. Cir. 1988). In determining obviousness, the invention must be considered as a whole and the claims must be considered in their entirety. See Medtronic, Inc. v. Cardiac Pacemakers, Inc., 721 F.2d 1563, 1567, 220 USPQ 97, 101 (Fed. Cir. 1983).

In rejecting claims under 35 U.S.C. § 103, it is incumbent on the Examiner to establish a factual basis to support the legal conclusion of obviousness. See In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the Examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one of ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed

invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal Inc. v. F-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the Examiner are an essential part of complying with the burden of presenting a *prima facie* case of obviousness. Note, In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. In re Fritch, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992). To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be suggested or taught by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1970). All words in a claim must be considered in judging the patentability of that claim against the prior art. In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

A showing of a suggestion, teaching, or motivation to combine the prior art references is an "essential evidentiary component of an obviousness holding." C.R. Bard, Inc. v. M3 Sys. Inc., 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998). This showing must be clear and particular, and broad conclusory statements about the teaching of multiple references,

standing alone, are not "evidence." See In re Dembieczak, 175 F.3d 994 at 1000, 50 USPQ2d 1614 at 1617 (Fed. Cir. 1999).

Moreover, it is well settled that the Office must provide objective evidence of the basis used in a prior art rejection. A factual inquiry whether to modify a reference must be based on objective evidence of record, not merely conclusory statements of the Examiner. See In re Lee, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002).

Furthermore, during patent examination, the PTO bears the initial burden of presenting a *prima facie* case of unpatentability. In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984). If the PTO fails to meet this burden, then the Applicant is entitled to the patent. Only when a *prima facie* case is made, the burden shifts to the applicant to come forward to rebut such a case.

Applicants respectfully submit that claims 1, 8, 21 and 22 recite a combination of features which are neither disclosed nor suggested by either Ueda or Hibino, alone or in combination.

Initially, Applicants respectfully submit that claim 1 depends from claim 8 and contains all of the features of claim 8.

Claims 8 and 21 positively recite a number of features, including forming and patterning a source electrode and a drain electrode over the first metal layer using a wet etch process; and subsequently forming and patterning the first metal layer and the second semiconductor layer in a same pattern by dry-etching using the previously formed and patterned source and drain electrodes as a mask to expose the active layer between the source and drain electrodes to reduce over-etching of the first metal layer and thereby reduce a leakage current between a

semiconductor layer and a source or a drain electrode, which are neither disclosed nor suggested by any of the applied art.

The Office Action clearly admits that Ueda does not disclose the wet etching and dry etching methods, as previously recited. Applicants also respectfully submit that Ueda also does not disclose using a wet etch process that allows the source electrode and the drain electrode to be etched but does not allow over-etching of the first metal layer, as recited in claims 8 and 21. This wet-etch feature is clearly disclosed, for example, on page 12, in lines 11-24 of the originally filed Application.

In an attempt to remedy the admitted shortcomings of Ueda, the Office Action turns to Hibino, which differs from Ueda in a number of ways. One significant difference is that Hibino employs a wet etch process to etch the aluminum film 21 portion of its double layered source electrode 19, the Al film layer 21 being disclosed as protected by both a TiN film 20 in the source electrode and gate insulator film 16. Another significant difference is that Hibino subsequently dry-etches its TiN layer 20, which is the lower layer of source electrode 19, and the N-plus channel section of the TFT. This is a significant difference between what is disclosed in Ueda, which is a three-metal layer source electrode using Al as the middle layer, and an n+ doped ohmic contact layer on a separate active layer which is made of an undoped film. In other words, Ueda does not have the protection from over-etching in Hibino, e.g., an Al film layer that is protected by both a TiN film and a gate insulator film.

Moreover, Hibino only discloses being concerned with over-etching of the one Al layer of its two layer source electrode, indicating no problem with over etching of the second layer of

its source electrode or of its active layer, and fails to indicate any problem with increasing leakage current caused by connection of its active layer with a source electrode.

The Office Action fails to provide proper motivation to modify Ueda in view of Hibino, as suggested, for a number of reasons.

First, Applicants respectfully submit that the aforementioned differences between Ueda and Hibino are significant in the context of lack of motivation of one of ordinary skill in the art to modify Ueda, because it means that Ueda does not have a structure that needs for the claimed wet and dry etching methods to operate properly and does not have a structure with Hibino's wet-etching protection films. Nor does Ueda have the specific three layer electrode structure and composition that will result in the collapsed second metal layer being created by wet etching and coming in contact with the active layer to increase leakage current --as discussed in the background of Applicants' invention on page 5, lines 1-23.

The Office Action also fails to demonstrate, for example, that wet etching of Ueda's three layered Mo/Al/Mo metal film structure 79 source electrode (see col. 17 of Ueda) will have such deleterious effects, because Ueda uses an ohmic contact layer made of an n+ type semiconductor film between the active layer 77 and the three layer electrode. Applicants respectfully submit that the Office Action has not provided objective factual evidence to demonstrate that providing a two step (wet-then-dry) etch to pattern Ueda's transistor electrodes would improve Ueda over using Ueda's single wet etch process, especially in view of the fact that Ueda has an ohmic contact area missing in the secondary reference that uses a wet-then-dry etch process.

Furthermore, the Office Action fails to present any objective factual evidence that one of ordinary skill in the art would appreciate that there is a problem caused by Ueda's single step wet etch process. This is evidence that the rejection is based primarily on improper hindsight reconsideration of Applicants' claimed invention based solely on Applicants' disclosure instead of on objective factual evidence of proper motivation to modify Ueda in view of Hibino, as suggested.

Second, Applicants respectfully submit that not only does Ueda's source electrode structure and overall construction differs substantially from that of Hibino, which teaches away from making the proposed modification of Ueda, but also that Hibino does not use its dry etch process to etch its source electrode Al layer, which further teaches away from making the proposed modification of Ueda. In this regard, Ueda has a three-layer metal source electrode with an Al layer plus a doped semiconductor ohmic contact layer which is clearly wet etchable without any indication of a problem due to the wet etching, whereas Hibino has a two-layer metal source electrode without an ohmic contact layer that is wet etchable without any indication of a source Al electrode problem with the wet etchant. Hibino then dry etches the lower metal layer 20 of the source electrode and the active layer 18 of the channel section. Then Hibino places a silicon nitride protection film 23 over the Al source electrode layer 21 to protect it from further etching solution (see col. 7, line 50 to col. 8, line 61 of Hibino).

Third, Hibino does not disclose use of its source electrodes as masks, as recited in Applicants' method claims (and device claim that depends from Applicants' method claim).

This feature simply is not shown in either of these two applied references, and no basis for providing such a feature is shown in either applied reference.

Furthermore, there are significant structural differences between these two applied references that teach away from their being combined, as suggested.

Firstly, whereas Ueda discloses either a single Mo metal film 79 as a source or drain electrode (cols. 12-13) or a three layered Mo/Al/Mo metal film structure 79 as a source or drain electrode (col. 17), Hibino discloses a two-layer source or drain electrode 19 made up of a lower layer TiN film 20 and an upper Al layer 21.

Secondly, Ueda's source or drain electrode is formed by etching using a resist pattern in a single step. The single Mo metal film layer 79 etched in a single step is disclosed in col. 13, lines 14-21, and the three layered Mo/Al/Mo metal film structure 79 being wet etched in a single step using a resist pattern is disclosed in col. 17, lines 22-30, without a disclosure of any deleterious effects such as, for example, increased leakage current. In Hibino, the two layer source or drain electrode 19 is formed in two separate steps, i.e., first the Al layer 21 is wet etched (col. 7, lines 35-45) in a process that does not affect the second TiN layer 20 and, subsequently, after the Al film 21 is etched, the lower source TiN electrode 20 is dry etched (col. 7, lines 50-56).

Thirdly, in Ueda, the metal film layer or layered source or drain electrode 79 is etched separately from the etching of the underlying semiconductor layers (col. 17, lines 22-42), whereas in Hibino, part (21) of the source or drain electrode 19 is etched separately from the

underlying semiconductor layers, whereas another part (20) of the source or drain electrode is etched along with the underlying semiconductor layers (col. 7, lines 34-40).

In other words, these two references differ significantly in (1) the nature of the structure of their source and drain electrodes, (2) the order in which the source and drain electrodes or electrode components are etched; (3) the composition of the source and drain electrodes; and (4) the reason why the source and drain electrodes are structured as they are.

Applicants respectfully submit that there are significant structural differences and processing differences between these two devices of the references and are the type of specific detailed factors that must be taken into consideration in evaluating whether one of ordinary skill in the art would be properly motivated to modify Ueda in view of Hibino, as suggested.

In response to similar previously presented arguments, the rejection argues that Hibino is a robust teaching of how and why one would want to use both wet and dry etching to obtain desired etching of some layers without over etching other layers, and is a very broad teaching as to the artful use of both dry and wet etching to obtain desired etching of some layers without over-etching other layers.

In response to these arguments, Applicants respectfully submit that the Office Action is speculatively generalizing about what Hibino actually discloses using Applicants' disclosure in an improper hindsight manner to flesh out this speculative generalization. A fair, balanced evaluation of Hibino reveals that its disclosure regarding wet etching is limited to forming two interlayer insulator films, one being inorganic and the other being organic, to prevent etching liquid from reaching the metal electrode through defects occurring in the interlayer films (col. 4,

lines 22-33). In one embodiment, Hibino's double layer wet-etch liquid protection is provided by the first source electrode layer as well as the gate electrode film (col. 13, lines 51-58).

Moreover, Hibino clearly does not disclose doing what is claimed, i.e., forming and patterning a source electrode and a drain electrode over the first metal layer using a wet etch process that allows the source and drain electrode to be etched but does not allow over etching of the first metal layer. Applicants do this by limiting the duration of the wet etch process, as clearly explained, for example, on page 12, in lines 11-24. Neither applied reference applies the wet etch process so that it does not allow over-etching of the first metal layer.

So, no matter how these two references are combined, they will not result in, suggest, or otherwise render obvious the claimed invention.

Also, the problems that Hibino discloses that it is directed to remedying include "problems of the source electrode 57 and the gate electrode 52 of Al materials" that are set forth from col. 2, line 50 to col. 3, line 11. However, the Office Action never establishes that these problems exist in Ueda and thus does not provide proper motivation to remedy problems exist in Ueda.

The first listed defect that Hibino is directed to remedying is (1) a defect in the gate insulator film 54 [that] causes the gate electrode 52 and the terminal section formed from the gate electrode 52 to be etched during the patterning of the source electrode (col. 2, lines 53-56). The problem of Hibino is said to be due to the gate electrode and the source electrode being made of Al (col. 2, lines 15-20). Ueda does not mention the existence of such a problem and such a problem does not appear to exist in Hibino because Ueda uses either a single Mo layer

source or drain electrode or a multilayer Mo/Al/Mo source/drain electrode, and Ueda's gate electrode is a refractory metal such as Cr or Mo-Ta alloy. Thus, this problem of Hibino does not exist in Ueda and one of ordinary skill in the art would not be motivated to remedy this non-existent problem in Ueda, as suggested.

The second problem listed by Hibino is during patterning of the ITO film pixel electrode 59, the source electrode 57 and the gate electrode 52 erode as the strong liquid etchant seeps through defects in the gate insulator film 54. To remedy this, Hibino disposes the pixel layer above two interlayer insulator layers made of an inorganic insulator film and an organic insulator film. Unfortunately, this problem is not seen to occur in Ueda, who deliberately avoids using a wet etching agent because of known drawbacks for this purpose and, instead etches the ITO pixel electrode film by RIE using methane or alcohol, HI gas, or the like as a main component (col. 17, lines 43-54 of Ueda). Thus, this second problem of Hibino does not exist in Ueda and thus one of ordinary skill in the art would not be motivated to remedy this non-existent problem in Ueda, as suggested.

The third problem listed by Hibino is "[I]f the pixel electrode is deposited over an interlayer insulator film having a double-layered structure constituted by an organic insulator film and an inorganic insulator film that are sequentially deposited, available chemical agents are limited by the need to protect the Al material for the Al electrode from erosion during the etching of the thickened organic film (col. 3, lines 1-7 of Hibino)." The solution used by Hibino, found in col. 3, lines 45-56, etches the organic insulator using a weak alkaline solution. Unfortunately, Ueda does not have such a problem because it does not use just Al electrodes and it does not

disclose the double inorganic and organic layer feature to which Hibino's solution is directed. Thus, this third problem of Hibino does not exist in Ueda and thus one of ordinary skill in the art would not be motivated to remedy this non-existent problem in Ueda, as suggested.

Moreover, Applicants respectfully submit that the broad-brush approach of this rejection fails to explain exactly what features of Ueda would be subjected to the wet etching and which features would be subjected to the dry etching, and fails to explain what the Hibino's two-step wet, then dry, etching of separate source/drain electrode layers 21/20 has to do with the single step etching of source/drain electrode 79 of Ueda and why one of ordinary skill in the art would be motivated to change the single etch step of the source/drain electrode 79 of Ueda with the two-step wet, then dry, etching of separate source/drain electrode layers 21/20 of Hibino. Such details are left to speculation and this broad-brush approach fails to provide objective factual evidence of why one of ordinary skill in the art would be motivated to so drastically modify Ueda's processes without an explanation of what improvement would be achieved, if any, and whether the proposed modification would result in any improvement at all.

Furthermore, Applicants respectfully submit that one of ordinary skill in the art would certainly not be properly motivated to modify Ueda's single Mo layer to etch it in a first wet etch process and then in a separate dry etch process, because only one etch process is needed for a single layer electrode. Also, Applicants respectfully submit that one of ordinary skill in the art would certainly not be properly motivated to modify Ueda's triple Mo/Al/Mo layer source/drain electrode in a first wet etch process and then in a dry etch process because only one etch process

is needed to accomplish this and because Ueda does not teach a TiN layer to protect the gate electrode as does Hibino.

In sum, the Office Action fails to explain why one of ordinary skill in the art would be motivated to turn to Hibino to modify the wet etch methods of Ueda, especially when the basic TFT structures are so different, as explained above, and because neither wet-etch process disclosed by these references applies a wet etch process that does not allow over-etching of the first metal layer.

Applicants also respectfully submit that this broad-brush basis for motivating a skilled worker is the type that is eschewed by the court in the aforementioned case of In re Dembiczak, and is not a clear and particular rationale, but only constitutes a broad conclusory generic statement that, standing alone, is not "evidence" of proper motivation to modify Ueda in view of Hibino.

In the alternative, claim 1 recites an LCD device made by the process of claim 8, and is not rendered obvious at least for the reason that claim 8 is not rendered obvious.

Furthermore, claim 1, as amended, recites a combination of features neither disclosed or suggested by the applied art.

Claim 1, as amended, recites a combination of features including that the source-drain electrode comprises two parts. One part, including the first, second and third metal layer, overlaps with the first and second semiconductor layer. The other part includes the second and third metal layer overlapping with the substrate around the gate electrode. Reference, is made, in this regard, to Fig. 7C, which illustrates this combination of features.

Thus, the Office Action fails to make out a *prima facie* case of proper motivation to modify Ueda, as suggested, to use a wet etch process for one part of its source electrode and a dry etch process for the rest of its source electrode.

Accordingly, this rejection of claims 1, 8, 21 and 22 is improper and should be withdrawn.

Reconsideration and withdrawal of this rejection are respectfully requested.

Claims 1-15 and 21-22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicants' admitted prior art (APA) in view of Ueda and further in view of Hibino. This rejection is respectfully traversed.

In response to the merits of this Office Action, Applicants respectfully note Applicants have not admitted that Figures 1-5 are prior art to them. In Fleming v. Giesa (BdPatApp&Int) 13 USPQ2d 1052 (7/17/1989) it was held that for an admission to be used against a party, it must be clear, unequivocal and unmistakable. *See also* Harner et al. v. Barron et al., 215 USPQ 743 (Comr Pats 1981), Suh v. Hoefle (BdPatApp&Int) 23 USPQ2d 1321 (4/30/1991), Issidorides v. Ley (BdPatApp&Int) 4 USPQ2d 1854 (4/2/1985) and Ex parte The Successor In Interest Of Robert S. McGaughey (BdPatApp&Int) 6 USPQ2d 1334 (3/4/1988).

All that Applicants have done is to refer to Figs. 1-5 as "Conventional" art. Something can be conventional art in the sense that it is practiced in the real world at the time of Applicants' filing of this Application and yet may not be prior art to Applicants in any sense, including, for

example, under 35 U.S.C. §103, which forms the basis for this rejection. See, in this regard, the relatively recent amendments to 35 U.S.C. § 103(c).

Under the circumstances, i.e., where Applicants merely describe Figs. 1-5 as conventional art, the Office Action has not established that Applicants have made a clear, unequivocal and unmistakable admission on the record that what is disclosed in Figs. 1-5 is prior art to Applicants. In this regard, the Examiner is also advised that the initial burden to establish something as prior art is on the Office as part of its burden of making out a *prima facie* case of unpatentability.

During patent examination the PTO bears the initial burden of presenting a *prima facie* case of unpatentability. In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984). If the PTO fails to meet this burden, then the Applicant is entitled to the patent. Only when a *prima facie* case is made, the burden shifts to the Applicant to come forward to rebut such a case.

Applicants respectfully submit that the Office has not made out a *prima facie* case of unpatentability at least because it has not made out a *prima facie* case that Figs. 1-5 are prior art to Applicants.

Applicants further traverse this rejection with the following remarks.

The manual of Patent examining Procedure, in general, and MPEP §608.01(c), in particular, clearly states that the background of the invention includes paragraphs “describing . . . the state of the prior art or to other information disclosed known to the applicant . . .” (emphasis added). Clearly, this section of the MPEP readily distinguishes between “prior art” and “other

information.” Accordingly, the manual of Patent examining Procedure, including MPEP §608.01(c), cannot logically be used as a basis for concluding that “conventional art” discussed in the Background of the Invention portion of the specification is prior art just because it is described as such in that portion of the specification. By the express terms of MPEP §608.01(c), “conventional art” disclosed in the background of the invention logically can be “other information”.

Applicants respectfully submit that they have not done anything improper, the possibility of which is alleged on page 13 of the Office Action. Applicants are arguing that a statement in the specification by Applicants that something is “conventional art” is not, in and of itself, a clear, unmistakable and unequivocal admission that what is “conventional art” is “prior art,” and that the Office Action’s conclusion to the contrary is not supported by the sections of the MPEP cited to support that contrary conclusion. In fact, under the circumstances, it is only the Office Action’s rejection that is improper in the sense that it improperly treats Applicants’ Figs. 1-5 and its corresponding description, as admitted prior art to Applicants.

Accordingly, to the extent that this rejection is based on admitted prior art by Applicants, it is improper and should be withdrawn.

Moreover, claim 1, as amended, positively recites a combination of features, including (1) a substrate; (2) a gate electrode over the substrate; (3) a first semiconductor layer over the gate electrode; (4) a second semiconductor layer over the first semiconductor layer; (5) a first metal layer on the second semiconductor layer, wherein the first metal layer is patterned to form a channel having substantially the same lateral dimensions as the second semiconductor layer to

prevent contact between the second semiconductor layer such that an outer edge of the first metal layer and an outer edge of the second semiconductor layer are lined up with one another to define a separation region for exposing some surfaces of the first semiconductor layer; and (6) source and drain electrodes having a first portion overlapping with the first metal layer to define a first upper portion of the separation region that abuts the lined up router edges of the first and second semiconductor layers, and a second portion overlapping with the substrate around the gate electrode wherein the source and drain electrodes include a second and a third metal layer.

With respect to claim 1, Applicants respectfully submit that claim 1, as amended, positively recites structural features that are neither disclosed nor suggested by any of the applied art.

It is respectfully submitted that the combinations of elements and steps recited in claims 1, 8 and 21 are not disclosed or made obvious by the applied art of record including the alleged APA, Ueda, and Hibino.

Applicants respectfully submit that the Office Action does not make out a *prima facie* case of proper motivation to modify the alleged APA in view of Ueda.

With respect to the APA-Ueda motivation issue, Applicants respectfully submit that Ueda is directed to preventing peeling of a metal mask (col. 2, lines 30-38). However, the "conventional" art disclosed by Applicants is not disclosed as exhibiting that problem. As stated by the CCPA in the case of *In re Sponnoble*, 56 CCPA 823, 405 F.2d 578, 866 O.G. 341, 160 USPQ 237, 243, "* * * a patentable invention may lie in the discovery of the source of a problem even though the remedy may be obvious once the source of the problem is identified. This is part of the 'subject matter as a

whole, which should always be considered in determining the obviousness of an invention under 35 U.S.C. 103."

Moreover, just because the references are from the same field of endeavor does not provide proper motivation to modify one in view of the other. A showing of a suggestion, teaching, or motivation to combine the prior art references is an "essential evidentiary component of an obviousness holding." C.R. Bard, Inc. v. M3 Sys. Inc., 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998). This showing must be clear and particular, and broad conclusory statements about the teaching of multiple references, standing alone, are not "evidence." See In re Dembiczak, 175 F.3d 994 at 1000, 50 USPQ2d 1614 at 1617 (Fed. Cir. 1999). In other words, the broad conclusory statement that "ordinary workers in the art of liquid crystals would find the reason, suggestion, or motivation" to modify the alleged APA in view of Ueda is not clear and particular enough to constitute evidence of proper motivation.

Applicants also respectfully submit that the Office Action fails to make out a *prima facie* case of proper motivation to modify the APA-Ueda reference combination, which is improper for reasons stated above, in view of Hibino based on the detailed arguments presented above concerning the improper motivation to modify Ueda in view of Hibino with respect to the traversal of the rejection of claims 1, 8, and 21 as unpatentable over Ueda in view of Hibino. Those arguments are incorporated herein as being applicable to the APA-Ueda-Hibino reference combination for the same reason that they apply to Ueda-Hibino combination.

In view of the forgoing, it is respectfully submitted that the applied prior art of record, including the alleged APA, Ueda and Hibino fails to teach or suggest the combination of

elements and steps set forth in claims 1 and 8. Accordingly, Applicants respectfully submit that the Office Action fails to make out a *prima facie* case of obviousness of the invention recited in claims 1-15 and 21-22 based on APA, Ueda and Hibino.

Reconsideration and withdrawal of this rejection of claims 1-15 and 21-22 are respectfully requested.

CONCLUSION

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the Office Action, and as such, the present application is in condition for allowance.

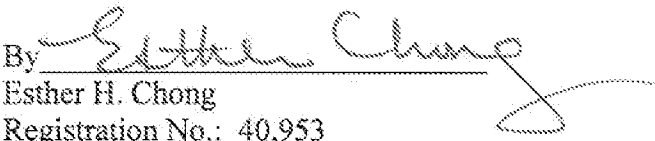
If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Robert J. Webster, Registration No. 46,472, at (703) 205-8000, in the Washington, D.C. area.

Prompt and favorable consideration of this Amendment is respectfully requested.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Dated: June 13, 2007

Respectfully submitted,

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